



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,184	02/14/2001	Arlie R. Conner	1266-030	7800
32692	7590	10/17/2003	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			NGUYEN, HOAN C	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 10/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/681,184

Applicant(s)

CONNER ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 11, 12, 15-25, 29, 30, 33-35 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) 6-10, 13, 14, 26-28, 31, 32 and 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11, 12, 15-25, 29, 30, 33-35 and 37-39 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group 1 and Species B (claims 1-7, 11-12, 15-25, 29-30) in Paper No. 12 is acknowledged.

Applicant's arguments regarding the restriction requirement have been considered; however, the traversal was on the grounds that there is no serious burden on the Examiner in examining all of Group I and II. This is found persuasive; therefore claims 1-7, 11-12, 15-25, 29-30, 33-35 and 37-39 would be considered (claim 36 in Group II belongs to a nonelected Species A).

Therefore, the requirement is deemed proper and is considered to be FINAL.

Claims 6-10, 13-14, 26-28, 31-32 and 36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions and species, there being no allowable generic or linking claim.

Response to Amendment

Applicant's arguments (amendment filed on 2/14/03 and 3/4/30) with respect to claims 1-7, 11-12, 15-25, 29-30, 33-35 and 37-39 have been considered but are moot in view of the new ground(s) of rejection.

Figs. 23-24 show respective color mosaic arrangement 300 and 310 that positions sub-pixels in denser, closer-packed arrangements with packed vertical column of color component sub-pixels. However, claims 18, 37 and 38 fail to cite these features "color mosaic arrangement" as Applicant's arguments in Remark (pages 5-6).

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 3/3/03 was filed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

Claims 1-7, 11-12, 15-25, 29-30, 33-35 and 37-39 are objected to because of the following informalities: The following limitations are lack antecedent basis:

- The limitation “the system” of claims 2-7, 11-12 and 15-18 should be “the color display system”.
- The limitation “the projector” of 20-25 and 29-30 should be “the color electronic display projector”.
- The limitation “the method” of 34-35 and 37-39 should be “the color display method”.
- The limitation “the display panel” in claims 1, 11, 16, 18, 19 and 26 should be “the pixellated electronic display panel”;
- The limitation “pixellated electronic display” in claims 3-4, 21 and 22 should be “pixellated electronic display panel”;
- The limitation “the display element” in claim 33 is lack antecedent basis;

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-2, 11-15, 19-20, 29-30, 33-35 and 36-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith (US6280037B1).

In regard to claims 1, 19, 33 and 39, Smith teaches (Figs. 4-6) a color display system comprising:

- an illumination system 63 that provides fixed, color-separated illumination of color-component sub-pixels in a pixellated electronic display panel (display panels 60a, 60b and 60c);
- a post-display panel dynamic displacement element (piezoelectric actuators 62) that displaces alignment of the color-component sub-pixels 46 generated by the display panel;
- a color separating system with plural angularly inclined dichroic mirrors 54a-b for providing the color separation of incident multi-color illumination light (claims 2, 20 and 34);
- a prism array the light redirecting means 44) positioned after the color separating element (claims 13-14);

wherein

- the post-display panel dynamic displacement element includes a pair of face-to-face refractive elements (prism arrays 52) with a separation between them that is modified to successively direct the color-component sub-pixels generated by the display panel along different optical paths (claims 11-12 and 29-30).
- the display panel includes color component sub-pixels that are arranged in vertical columns for each color component and panel in adjacent rows and after the display element includes displacing selected color components in lateral and transverse directions as shown in Figs. 5-6 according to claims 37-38.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3-7, 16-17 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US6280037B1) as applied to claims 1-2, 11-15, 19-20, 29-30, 33-35 and 39 above, in view of Steiner et al. (US5748828A).

Steiner et al. teach (Figs. 3) a color display system comprising further

- a microlens array (collimation structure 22) positioned adjacent the pixellated electronic display for collimating light; It is also conventional that microlens can

replace lens as Smith disclosed for collimating light; wherein the each microlens is aligned with and delivers light to a triplet of color-component sub-pixels that are arranged in a horizontal row (Fig. 2a) according to claim 16 the display panel includes color component sub-pixels that are arranged in vertical columns for each color component and successive sub-pixels in each column are positioned in alternate successive rows (Fig. 2a) according to claim 17.

- a grating (color separating optical element 40) positioned between the microlens array and the pixellated electronic display, wherein the grating with holographic optical elements include holographic grating for conventionally displaying the 3-dimensional images (col. 5 lines 29-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a color system as Smith disclosed with a micro-lens array for collimating light and holographic grating for conventionally displaying the 3-dimensional images.

3. Claims 18 and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US6280037B1) as applied to claims 1-2, 11-15, 19-20, 29-30, 33-35 and 39 above, in view of Shirochi (US5872654A).

Shirochi teaches (2-3) a color display system further comprising a microlens (prism 31) array positioned adjacent the display panel, wherein the each microlens is aligned with and delivers light to a triplet of color-component sub-pixels that are

positioned among two adjacent horizontal rows for diffusing more than three color pixels.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a color system as Smith disclosed with a microlens (prism 31) array positioned adjacent the display panel, wherein the each microlens is aligned with and delivers light to a triplet of color-component sub-pixels that are positioned among two adjacent horizontal rows for diffusing more than three color pixels.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

chn
October 8, 2003


HOAN C. NGUYEN
PRIMARY EXAMINER